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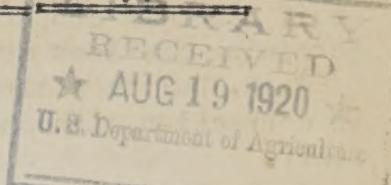
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MONTHLY LETTER OF THE BUREAU OF ENTOMOLOGY
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W. R. McCONNELL



The death of Mr. W. R. McConnell, which occurred on June 23, at Carlisle, Pa., was a great shock to his many friends throughout the Bureau. Mr. McConnell was one of the most brilliant, able, and amiable young entomologists in Federal employ. He was born at Whitesburg, Pa., in 1881, and graduated from Pennsylvania State College in 1906, receiving his degree of M. S. from the same institution in 1910. He was in charge of the Department of Zoology and Entomology at Pennsylvania State College for several years, and in 1912 entered the employ of the Bureau of Entomology as Scientific Assistant for duty in the lower Mississippi Valley. Shortly afterward he was placed in charge of a field laboratory located at Greenwood, Miss. Since the fall of 1914 Mr. McConnell has been in charge of laboratories located at Hagerstown and Carlisle, respectively, where he was engaged in the investigation of the Hessian fly, and especially the hymenopterous parasites affecting that well-known pest. Mr. McConnell's contributions to our knowledge of these parasitic insects were numerous and valuable, and he was able to go more deeply into the biology and ecology of members of this complex group than any other investigator who had attacked the problem. He was deeply versed in the literature of his subject, scrupulously conscientious regarding the accuracy of findings, and cleanliness of technique. Unfortunately he was exceedingly cautious as regards publication, and for this reason withheld many valuable data which, if available, would have enabled his colleagues to take up his task where he laid it down.

Mr. McConnell was an intense and indefatigable worker, and so deeply interested in his researches as to permit them to overtax by long hours of study a constitution already impaired by previous illness, and there is no doubt that he sacrificed his life because of this fact.

He was a member of the Entomological Society of America, the American Association of Economic Entomologists, the American Association for the Advancement of Science, and the Entomological Society of France.—W. R. W.

CEREAL AND FORAGE INSECT INVESTIGATIONS

W. R. Walton, Entomologist in Charge.

R. A. Vickery, formerly in charge of the field laboratory at San Antonio, Texas, has been transferred to Boston, Mass., for duty on the corn borer control work under L. H. Worthley.

C. H. Gable, formerly assistant at Tempe, Ariz., has been placed in charge of the San Antonio station. Mr. Gable was formerly entomologist and commissioner of agriculture for the Madeira Islands, is a graduate of the Nebraska State University, and had wide experience in entomological work previous to his service in the Bureau of Entomology.

A. H. Beyer, formerly assistant at Wichita, Kans., has been transferred to the corn borer control work under L. H. Worthley, with headquarters at Boston, Mass.

A severe outbreak of grasshoppers has been in progress in the northern central counties of North Dakota during the past six weeks, and farmers in these counties have been appealing to State and National organizations for funds with which to combat the insects. A. C. Burrill of the Forest Grove staff has been cooperating with the State entomological authorities in determining the best means of attacking the problem.

W. R. Walton visited Carlisle, Pa., on June 16, for the purpose of inspection in connection with the Hessian fly investigations and consultation with the staff.

J. S. Wade recently returned from a visit to the field stations of the central west, including Lafayette, Ind., Webster Groves, Mo., and Wichita, Kans.

Robert Fouts has been appointed field assistant for three months and assigned to duty at Carlisle, Pa., for the purpose of assisting in the investigation of the hymenopterous parasites of the Hessian fly.

A severe outbreak of chinch bugs is in progress in southern Illinois, and especially in eastern Missouri, the focus of infestation in the latter State being St. Louis County, where great damage has occurred.

An outbreak of the fall army worm is in progress in South Carolina, and apparently in Mississippi also. The insect has entered pupation in South Carolina, and it is believed that additional damage may be expected to the northward from the resulting brood of moths.

The maximum flight of the European corn borer in eastern Massachusetts began June 12, which is about ten days later than in 1918 and 1919. Eggs of the insect were found in abundance on various plants June 15, and a remarkable departure from the habits of the insect in former years was observed in the deposition of many egg clusters on spinach, beets, and other cultivated plants.

The page proof was recently read for a Farmers' Bulletin on the "Control of Grasshoppers in the Pacific States," by T. D. Urbahns. The publication will be available for distribution in the near future.

H. P. Wood, attached to the investigations of insects affecting the health of animals at Dallas, Tex., will be transferred to the investigations of the European corn borer under D. J. Caffrey, with headquarters at Arlington, Mass. This transfer will take effect August 16.

Mr. W. R. Walton visited Boston during the week of June 3 and, accompanied by L. H. Worthley, proceeded to Buffalo, N. Y., for the purpose of inspecting the area infested by the European corn borer in the western portion of New York. While in Buffalo they were in conference with George G. Atwood, Director of the State Bureau of Plant Industry, regarding the conduct of the quarantine and control work in connection with the insect. The Schenectady area was visited on the return trip, where inspections of the experimental plots and market conditions were conducted. The quarantine inspection for the European corn borer in eastern New York is in charge of T. R. Richardson. In the western New York area this work is in the hands of Hastings N. Bartley, assisted by T. B. Heald.

FOREST ENTOMOLOGY

A. D. Hopkins, Entomologist in Charge

F. B. Herbert, stationed at the Los Gatos, Calif., field laboratory, has submitted his resignation to take effect July 1. Mr. Herbert has been doing

valuable work under the direction of H. E. Burke on insects injurious to shade trees and their control, particular attention being paid to scale insects. During the five and one-half years he has been in the Bureau Mr. Herbert has prepared several important publications on scale insects. These deal with biology, taxonomy, and economy. He is taking a position with a commercial insecticide company located in California at an increased salary.

Ada F. Kneale, who has been assisting Carl Heinrich in studies of forest and other Lepidoptera at the Eastern field station and the National Museum, left Washington May 10 for Boulder, Colo., where she is pursuing similar studies for Mr. Heinrich. Miss Kneale has presented her resignation as effective July 1, but hopes to be able to return to Washington in the fall and continue her investigations. Miss Kneale was appointed in June, 1918, and since then has done valuable work on the biology of Forest Lepidoptera, completing papers on the life history and habits of two species. During the past winter she has worked with Mr. Heinrich on a revision of Erebidae and has prepared many excellent drawings of the genitalia.

Prof. T. D. A. Cockerell of the University of Colorado spent the last two weeks in June assisting S. A. Rohwer to arrange the National collection of bees. This was a very large task to complete in so short a time, but by unusual effort the entire named collection has been arranged in one series and a small part of the unworked material identified.

Dr. A. G. Boving and Dr. F. C. Craighead left Washington on June 25 for Harrisburg, Pa., to consult with Prof. J. G. Sanders, economic zoologist, and to study the coleopterous larvae in the State Museum. The State of Pennsylvania is publishing Dr. Craighead's large illustrated paper on cerambycid larvae.

Recently the Moving Picture Laboratory of the Department has completed a film, now ready for release, on the periodical cicada. It is entitled "The most wonderful insect in the world," and was made under the direction of Dr. T. E. Snyder of this branch.

On June 25 this branch received a request by wire from the Commandant of the U. S. Naval Aircraft Factory, located at the Navy Yard, Philadelphia, Pa., to inspect insect damage to timber used in constructing Navy aircraft. Dr. Snyder made an inspection of the damaged timber and found that 32 large piles of seasoned ash timber had the sapwood heavily infested with Neoclytus erythrocephalus Fab. This insect attacks the sapwood of seasoned ash and other hardwoods, reducing the wood fiber to a powder-like condition. Injury in this case was due to the fact that the timber was purchased with the bark on. In the future a clause will be inserted in the purchase specifications excluding all timber with bark on.

J. H. Pollock, of the Colorado Springs, Colo., field station, states: "In the vicinity of Colorado Springs, Colo., seedlings and saplings of Pinus sylvestris are being severely injured again this season by one of the tip moths (Evetria neomexicana Dyar). At this time injured tips are beginning to turn yellow and show a conspicuous unhealthy appearance. In many cases almost every young shoot on the small trees is being destroyed by the larvae of this insect."

"Injuries from this species were first noticed in this locality during the summer of 1917. Some of the local people, whose trees were being greatly damaged, cut off the injured tips, thinking this would eradicate the pest. but the following season the depredations were just as extensive as before.

"Results obtained from recent experiments indicate that removing the infested tips without destroying them will not eliminate the trouble, for the larvae will transform to pupae, remain in this condition through the winter, and emerge as adults the following spring."

J. C. Evenden, of the Coeur d'Alene, Idaho, field station, reports that: "Research studies of the Coeur d'Alene Forest Insect Station concerning Dendroctonus monticolae infestations in western white pine will be carried on in the Coeur d'Alene National Forest. There are approximately 269,160 A. white pine type, or 1,500,000 M.b.f. white pine in this forest which is 35 per cent of the entire stand. The entire white pine type will be covered each year by a very extensive reconnaissance, to determine the character and extent of the general infestation. Research work will be conducted within a tract of 9,000 acres of white pine type on the headwaters of Independence Creek. This tract has been secured from the Forest Service for a period of five years as an experimental area. The location is well adapted to this study as it is practically surrounded by large burned areas, which gives an isolation from outside conditions and factors. The infestation is now at a very low stage, but in the past few years a large volume of white pine has been killed by Dendroctonus monticolae.

"The points which will be covered in the research work are as follows:

- 1.- To determine the importance from an economic viewpoint of the depredations by Dendroctonus beetles in the forests of northern Idaho.
- 2.- The cause, character, and period of time relative to the intermittent increase and decrease in the annual infestation.
- 3.- Studies of seasonal history, conditions influencing rate of mortality, factors which induce beetles to attack certain individuals of their host species, flight habits, and the relation of forest fires to subsequent insect attack. These studies are to be carried on in conjunction with Dr. Hopkins's investigation of the bioclimatic law. Investigations will also be made for possible and practical control measures.
- 4.- To investigate secondary insects, and barkbeetles of minor importance, with the character and extent of damage involved, as well as the relation of these insects to the primary species."

Dr. F. C. Craighead of this branch of the Bureau left Washington on July 20 for Kanawha Station, W. Va., for an investigation of Prionus root-borers in oaks.

SOUTHERN FIELD CROP INSECT INVESTIGATIONS

J. L. Webb, Entomologist Acting in Charge

The following appointments have been made: Cotton-boll weevil investigations, Tallulah, La., permanent - F. R. Bibby, M. R. Smith, and Joseph C. Woolley; temporary - Geo. W. Alexander, Sidney N. Boyd, Andrew J. Chapman, Joseph Crister, B. M. Deavenport, Clyde Dunn, J. A. Harris, R. T. Hobson, Thos. H. Holland, J. W. Hollandsworth, Elmer E. Holley, J. A. Humphries, A. J. Mattox, A. G. McCarty, L. G. Plyer, Wm. D. Reed, Arthur Shaver, Wm. R. Smith, W. A. Stevenson, Adolph Thomas, W. B. Vinzant, R. L. White, V. V. Williams, Madison, Fla., laboratory, temporary - W. W. Alexander, Paul Calhoun.

Tobacco Insect Investigations, Clarksville, Tenn., temporary - L. N. Judah, J. T. Lewis jr., Scott C. Lyon, M. L. MacQueen, T. P. Weakley.

Sugar-Cane Insect Investigations, New Orleans, La., temporary - Wallace E. Haley; Brownsville, Tex., laboratory - L. R. T. Cowen.

Miscellaneous Insect Investigations, Mound, La., temporary, - Chas. Gaylord Van Dine.

Everett E. Wehr of the Dallas, Tex., laboratory, conducting investigations of insects affecting health of animals, resigned June 30, for the purpose of reentering college.

R. W. Wells is at present located at Herkimer, N. Y. studying the ox warble.

O. G. Babcock is located at Sonora, Tex., investigating the screw worm in cooperation with the Texas Experiment Station.

The Bureau of Chemistry has assigned two chemists to the boll weevil laboratory at Tallulah, La., to make analyses of samples of calcium arsenate prepared for dusting cotton for control of the boll weevil. The volume of work was found to be too heavy for one man to handle.

L. Z. Naylor has been transferred from the boll weevil force to the Insecticide Board as an inspector.

J. N. Tenhet has been transferred from the tobacco insect laboratory at Quincy, Fla., to Clarksville, Tenn.

George N. Wolcott was transferred from the Bureau of Plant Industry to the Bureau of Entomology, sugar-cane insect investigations, July 1. He is at present located in Porto Rico but expects to leave the service in the near future to accept the position of entomologist for Santo Domingo.

Dr. W. D. Hunter was in Washington July 12 to 17, to attend the meeting of the Federal Horticultural Board for the consideration of the pink bollworm situation in Texas and Louisiana.

DECIDUOUS FRUIT INSECT INVESTIGATIONS

A. L. Quaintance, Entomologist in Charge

W. M. Davidson, engaged in investigations of predatory insects at Alhambra, Calif., has been transferred to the Insecticide and Fungicide Board and will assist in insecticide-testing work at the Vienna, Va., laboratory of the Board.

Mrs. M. L. Gardner, who has been assisting Dr. A. C. Baker in studies of Aphididae and Aleyrodidae, has been transferred to the Bureau of Biological Survey.

F. J. Brinley, formerly engaged in investigations of the insect enemies of sugar beets at Greeley, Colo., has been transferred from the Office of Truck-Crop Insect Investigations to this office and has been assigned to the Japanese beetle project at Riverton, N. J.

Winfield F. Runyen, a graduate of the Kansas State Agricultural College, has been appointed as plant quarantine inspector and is engaged in inspection work in connection with the Japanese beetle investigations at Riverton, N. J.

E. H. Siegler made a short trip to Riverton, N. J., and Wallingford, Conn., to confer with agents in charge of the laboratories at these two places.

GIPSY-MOTH AND BROWN-TAIL MOTH INVESTIGATIONS

A. F. Burgess, Entomologist in Charge

Owing to the cold weather during June and an excessive amount of rain, spraying was seriously interfered with. Conditions were such, however, that the development of the gipsy moth larvae was considerably retarded, and as a result spraying was continued during the first week in July. Approximately the same area was treated as in past seasons, work being done in all of the New England States excepting Maine and Vermont. The infestation is severe in the region south of Boston and in southern New Hampshire. In the northern part of the infested area there was a heavy mortality of gipsy moth egg

clusters that were deposited above the snow line, which was due largely to the extremely severe winter.

During July new gipsy moth infestations have been reported from Somerville, N. J., and Brooklyn, N. Y., two areas outside the region infested in New England. An examination is being made to determine the extent of these infestations and active work is to be taken up in cooperation with the States concerned to exterminate these colonies.

The experimental work has been greatly curtailed owing to shortage of funds. From the field reports and collections that have been made, it appears that parasites and natural enemies have been slightly more abundant this year than during the previous year.

A European insect known as the satin moth, Stilpnotia salicis, was reported this year in Medford, Mass. It was found feeding on poplar trees, some of which were defoliated. This insect is said to feed in Europe on poplar, willow, and oak. An endeavor has been made to clean up the worst infested area by the Superintendent of the Middlesex Fells Reservation and the State Forester in Massachusetts. Information concerning the life history and habits of this insect is being secured by assistants from the gipsy moth laboratory and field men from the Bureau of Entomology at Melrose Highlands, Mass., to determine the extent of the infestation. At this writing the insect has been found in 28 towns north of Boston.

The brown-tail moth has occurred in sufficient numbers in several localities in Massachusetts and New Hampshire to defoliate orchards completely. These are in the eastern part of the territory. No severe infestations have been found near the outside border of the infested area.

LIBRARY

Mabel Colcord, Librarian

New Books

Arwati, B. R. Bionomics of house flies. In Indian Journal of Medical Research. v. 7, no. 2, p. 548-567, Jan., 1920.

- I. Outdoor feeding habits of house flies with special reference to Musca promisca (angustifrons?), p. 548-552.
- II. Attraction of house flies to different colours, p. 553-559.

III. A preliminary note on attraction of house flies to fermenting and putrefying substances, p. 560-567.

Blatchley, W. S. Orthoptera of northeastern America... 784 p., illus.

Indianapolis, The Nature Publishing Co., 1920.

Bibliography, p. 747-767.

Bounoure, Louis. Aliment, chitine et tube digestif chez les coléoptères. 294 p., illus. Librairie scientific A. Hermann et fils, Paris, 1919. (Collection de morphologie dynamique, Directeur Frederic Houssay.)

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Cockerell, T. D. A. Zoology; a text-book for colleges and universities. 558 p., illus. N. Y., 1920. (New-World Science Series.)

Crabtree, J. H. Wonders of insect life. 211p., pls. London, N. Y. (1919.)

Horn Scientific Expedition to Central Australia. Report of the work... Pt. 2. Zoology. 431 p., 28 pl. London, Dulau and Co.; Melbourne, Melville, Mullen and Slade, Feb., 1896.

Morse, A. P. Manual of the Orthoptera of New England including the locusts, grasshoppers, crickets and their allies. Boston, Mass. Printed for the Society with the aid of the Gurdon Saltonstall fund, April, 1920.

(Boston Society of Natural History. Proceedings, v. 35, no. 6, p. 197-556,
pl. 10-20.)

Parkinson, W. H., and Bell, H. D. Insect life on sewage filters. 64 p., illus.
table. 16°. London, The Sanitary Publishing Co., Ltd., 1919.

Navarro, Leandro. Nuevas aplicaciones del procimiento de fumigacion con el
acido cianhidrico a la extencion de una plaga de los olivos... *Phloeoethrips*
oleae (Costa Targ.) ... 96 p., 7 pl., table. Madrid, Imprenta artistica
Jose Blass y cia., 1912.

Ratto, Lorenzo. Censorzi antianofelici e il risanamento delle terre malariche.
177 p. Roma, Cooperativa tipografica italiana, 1918.

Rivas, Damaso. Human parasitology. 715 p., illus. Philadelphia and London,
W. B. Saunders Co., 1920.

Sarsfield, James. Insect pests and how to beat them. 202 p., illus. London,
1919.

Schaupp, F. G. Synopsis of the Cicindelidae of the United States of North
America. p. 73-214. Brooklyn, 1884. (Bulletin Brooklyn Ent. Soc., v. 6.)

Underhill, B. M. Parasites, the zoology and control of the animal parasites
and the pathogenesis and treatment of parasitic diseases. 379p., illus.
N. Y., The Macmillan Company, 1920.

Verity, Roger. *Rhopalocera palaearctica*. 2 vols. lxxii pl. v. 1, Text. v. 2,
Plates. Florence, 1905-1911.

TRUCK CROP INSECT INVESTIGATIONS

F. H. Chittenden, Entomologist in Charge

Sweet-potato weevil eradication will be continued in the States of Florida,
Georgia, Alabama, and Mississippi. A cut of \$26,000 in funds, however, has
made it necessary to discontinue active measures in the States of Louisiana
and Texas, only a skeleton organization remaining there. C. E. Smith, in charge
of the work in Louisiana, has been transferred to Baton Rouge, assuming the
responsibilities of the truck crop station in addition to which he will con-
duct the final inspection on the eradication experiments in southern Louisiana.
M. M. High will continue as heretofore in life-history work and insecticidal
research in Texas.

All inspectors in both of these States have terminated their appointments
with this office. In Florida and Mississippi, where the greater part of the
work is now being conducted, the draw distribution has been entirely completed
and the work is now confined to the burning of hold-over potato banks and
the inspection of old fields for volunteer plants. The State Plant Boards
of Florida and Mississippi together grew approximately 2,500,000 plants of
twelve different varieties, on which delivery was completed during June by
our inspectors. A late, cold spring retarded the plant growth to such an
extent that delivery was not completed as soon as expected and some difficulty
was experienced in securing satisfactory plants in the required number from
plantings under the supervision of the Bureau, a number of plants having to
be purchased outside.

As matters now stand, a sweet-potato crop above the average is forecasted
in these States.

No volunteer plants have been found in the old fields in Florida, showing
that the cleanup measures following the harvest have been very effective.
Very few potatoes of last year's crop now remain in storage and the banks

have been for the most part cleaned as soon as emptied, very good cooperation being shown by the growers through the promise afforded by the success of last year's work. Whenever unclean banks are found by the inspectors the contents are promptly burned.

A careful inspection has been made of the main Gulf shore of Mississippi for infested morning-glory vines, these having been found to be infested at two points only, both in the neighborhood of Pass Christian. The inspectors have carefully dug and burned all vines in this vicinity and a close watch is being kept on both localities so that any young plants which may later appear may be destroyed.

Up to the present time the work in Mississippi has proceeded on schedule but at the end of the fiscal year has been materially hampered by the difficulty of obtaining satisfactory automobile transportation. It is hoped that four light-weight trucks, which will obviate this difficulty, can soon be placed in service.

Thomas H. Jones, continuously with this office since 1909, has recently resigned to accept a position as State entomologist of Louisiana. He will continue in the Bureau as a collaborator.

T. H. Cutrer, scientific assistant at Baton Rouge, La., has resigned to enter commercial work.